We claim:

1. A method of delivering an oligonucleotide or a plasmid expressing an oligonucleotide into a target cell comprising:

a) introducing the oligonucleotide or the plasmid into a donor cell; and

b) contacting the target cell with the donor cell under conditions permitting the donor cell to form a gap junction channel with the target cell, whereby the oligonucleotide, the plasmid expressing the oligonucleotide or a peptide product thereof is delivered into the target cell from the donor cell.

2. The method of claim 1, wherein the oligonucleotide is RNA that can traverse the gap junction or be transcribed into a peptide that can traverse the gap junction.

3. The method of claim 1, wherein the oligonucleotide is DNA.

4. The method of claim 1, wherein the oligonucleotide is an antisense oligonucleotide or a cDNA that produces an antisense oligonucleotide that can traverse the gap junction.

5. The method of claim 1, wherein the oligonucleotide is a siRNA oligonucleotide or a cDNA that produces a siRNA oligonucleotide that can traverse the gap junction.

6. The method of claim 1, wherein the oligonucleotide is a DNA or RNA that produces a peptide that can traverse the gap junction.

7. The method of claim 1, wherein the plasmid encodes siRNA.

8. The method of claim 1, wherein the oligonucleotide comprises 12-24 nucleotides, preferably 18-22 nucleotides.

9. The method of claim 1, wherein the donor cell is a human mesenchymal stem cell.

10. The method of claim 1, wherein the donor cell is a cell containing, or engineered to contain a connexin protein.

11. The method of claim 1, wherein the target cell is present in a syncytial tissue.

12. The method of claim 11, wherein the cell in the syncytial tissue is selected from the group consisting of a cardiac myocyte, a smooth muscle cell, an epithelial cell, a connective tissue cell, and a syncytial cancer cell.

13. The method of claim 1, wherein the target call is a white blood cell.

14. The method of claim 1, wherein the gap junction channel is composed of connexin 43.

15. The method of claim 1, wherein the gap junction channel is composed of connexin 40.

16. The method of claim 1, wherein the gap junction channel is composed of connexin 45.

17. The method of claim 1, wherein the gap junction channel is composed of connexin 32.

18. The method of claim 1, wherein the gap junction channel is composed of connexin 37.

19. The method of claim 1, wherein the gap junction channel is composed of at least two of connexion 43, connexin 40, connexin 45, connexin 32 and connexin 37.

20. A method of delivering an oligonucleotide into a target cell comprising:

a) introducing an oligonucleotide into a human mesenchymal stem cell or other donor cell; and

b) contacting the target cell with the human mesenchymal stem cell or other donor cell under conditions permitting the donor cell to form a gap junction channel with the target cell, whereby the oligonucleotide or a peptide product expressed therefrom is delivered into the target cell from the donor cell.

21. A method of delivering an oligonucleotide into a syncytial target cell comprising:

a) introducing an oligonucleotide into a donor cell; and

b) contacting the syncytial target cell with the donor cell under conditions permitting the donor cell to form a gap junction channel with the syncytial target cell , whereby the oligonucleotide is delivered into the syncytial target cell from the donor cell.

22. A method of delivering RNA into a target cell comprising:

a) introducing RNA or a plasmid transcribable into RNA into a donor cell; and

b) contacting the target cell with the donor cell under conditions permitting the donor cell to form a gap junction channel with the target cell, whereby the RNA or the plasmid is delivered into the target cell from the donor cell.

23. A method of delivering DNA into a target cell comprising:

a) introducing a DNA or a plasmid coding for the DNA into a donor cell; and

b) contacting the target cell with the donor cell under conditions permitting the donor cell to form a gap junction with the target cell, whereby the DNA or the plasmid is delivered into the target cell from the donor cell.